THE

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ABOUT THE GRAPE.

BY F. R. ELLIOTT.

I DO not propose to write a treatise, or give *perfect* directions how to select soils—plant and prune vines, etc—but, as I have been studying grapes somewhat, and reading all remarks of grape growers that I could have access to, I propose in a desultory manner to make my comments.

In the October number of the HORTICULTURIST was published a letter of mine, on the selection of soils whereon to grow the grape; some questions having been put to me respecting what I meant in that letter by *calcareous limestone soils*; before I say anything more, that is considered blind, let me answer: that by that term I mean soils of limestone, originally possessed of such slight coherence, that they disintegrate easily when exposed to frost, &c., breaking the rock to a sort of calcareous sand. These differ very materially from what are usually termed limestone soils; the latter resting upon beds of solid limestone, and rarely having in their composition any carbonate of lime, and requiring the application of lime as a manure, as readily, if not quite as much, as soils that were formed from sand, stones, &c. Capillary attraction may assist, and probably does, in supplying lime and other minerals to the roots of plants growing in soils resting on solid limestone. Calcareous limestone soils are not abundant in our States. So far as I know, Missouri possesses the largest quantity; and had I the grape fever, at such temperature as to make grape growing my own business, I would select my land in Missouri without delay; believing as I do, that all grape growers at the West must look to the wine made from the fruit, and not to sales of the fruit, for their profits. So much in explanation of what was before written. The classification of soils in which to grow the grape is by some regarded as all nonsense, and, judging from an article in the January number of the HORTICULTURIST, Mr. A. S. Fuller, author of a book on grape culture, evidently considers *any* soil suited to grape growing; and, so it is, "within one or two hundred miles of the Atlantic coast," *location* is of small consequence. It may be

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that Mr. Fuller is right, and in so far as the mere fact of growing grapes is concerned, there is no doubt of it—but, while hundreds or thousands of acres *may* be grown around New York, Philadelphia and other large cities, and sold for table use—the hundreds and thousands of acres *now* growing throughout our Western States, must find return of profits in manufacture of the fruit into wine. Coming, therefore, down to that point, we have records from the old country, where soil, in a distance of less than half a mile renders one vineyard so valuable as to be unpurchasable; while another can be bought at a very low rate. In Illinois, some years since, I visited two vineyards, distant from each other not one eighth of a mile, both cultivated and trained alike. One made a good wine, the other only a moderate, or rather poor quality. In my immediate section, or the south shore of Lake Erie, we have grapes growing in almost every variety of soil, and so well is the matter now understood by our best wine makers, that they make a decided variation in the prices paid for grapes. Vineyards of Catawba, growing on sandy or loamy soils, find sale at a very low price to the wine makers. Some refusing to use them at any price, while they pay from seven to ten cents for the same variety upon limestones and clays. Indeed, we have men who claim they can detect the soil in which the grape was grown by seeing the bunch.

The author of "Ten Acres Enough," in January number of HORTICULTURIST, says he "never knew the Isabella grape was fit to eat," until this last fall, when he ate from a vine fed from the burial ground of cats, dogs, mules, etc. E. W. Bull, the originator of Concord grape, while advising a light, warm or good corn soil, says, the flavor of the fruit will be injured by application of coarse, rank manures, and advises use of bone dust, ashes and gypsum.

C. M. Glidden, of Ironton, O., on clay soil, digs three and a half feet deep; puts in bones; adds fifteen or twenty inches of stable manure, and waters the vines during summer, *daily*, with lime-water.

In a trip to one of the islands in Lake Erie, last summer, I saw vines, of different varieties, loaded with fruit; they had been manured with fish; and by-the-by it strikes me, were I living on the same shore, I should act on this item to a certain extent; especially, if showy fruit and rapid growth of vine was an object, as it often is to the propagator and exhibitor. In Missouri, Mr. Husmann, one of our most intelligent of grape men, says the Catawba is unworthy of culture, because of its rotting; while L. D. Morse, Esq., Secretary of the Missouri State Board of Agriculture, says he visited a vineyard on the line of the Pacific Railroad—soil post oak clay, with pellets of iron intermixed, resting on a stratum of gravel, and that on magnesian limestone; and here neither rot or mildew affects the grape. Mr. Husmann's ground is a strong clay, and mostly, I think, a side hill.

Apparently there is collision in these statements, but in reality none, as no test of the sugar, alcohol or acid, in the various locations and practices has been made, and the matter of advising manure or no manure rests on the *taste* of various men, whom, if met together, very likely would differ as much in the eating of the same grape, pronouncing on it as they do on soils for its cultivation. Many assert that the appearance of grapes grown on sandy or loamy soil is better than those grown on clay, and to those who look only to the surface of the fruit, it may be so; hence the adaptation of any soil to grow grapes.

Unfavorable seasons however, occur to all fruits, the grape neither more, nor perhaps less than others; but when an unfavorable season does occur, when the rot or mildew affects the fruit, so as to render it undesirable for table use; then comes the test of soils, in giving to the fruit such qualities as will render it valuable for making *pure* wine; for remember, we of the West ignore all so-called wines, in which sugar, sorghum, alcohol or other substances may have been

mingled. There is yet another point that in the grape culture has perhaps been too much overlooked. It is the adaptation of *varieties* to soils and climates, or localities. The American Pomological Society once undertook to recommend fruits for general cultivation; but they failed so signally, that their list has never received much attention. The observing fruit grower soon learns to distinguish what variety will and what will not answer for his soil and locality, and when some one or two apples, and as many of pears, seem to succeed everywhere, the majority will not do so.

The Concord grape seems apparently to do well nearly everywhere, but its quality is undoubtedly improved or reduced by soil and location; for while some have claimed to make from it a *pure* and good wine, others can only obtain a thin, red wine, about equal to claret.

The Delaware is, perhaps, on the other hand, a variety that chooses its soil and location, with as dainty a root as any hardy sort. Simple undulations, in a field, with their natural variations of surface soil, often changing it from a vigorous, healthy vine, producing delicious, good-sized fruit, to that of a puny weakling with small, sweet, but insipid fruit.

Mr. Fuller, in the article I have before quoted, names a list of grapes to grow for "profit." They are "Delaware, Iona, Israella, Concord, Creveling, Hartford, and Rogers No. 3, 4, 15 and 19."

Such a recommendation of a list ought to make them succeed everywhere; but, unfortunately, with the Delaware, as I have just written, a distance of only say twenty feet, with a slight change in surface soil, the sub soil being alike, has made distinct qualities of the grape, and a distinct habit of growth. The Iona is as yet new, having only been sent out about two years, and its growers have petted it, as all do new and expensive plants. So far, we may say, the vines grow sufficiently strong to promise well, but its chances of freedom from rot, etc., are yet unknown, nor can they be fully known under ten years. The Isabella, like the Iona, is also new, and the same may be said of it. The promise of these however is so good, that where a man has grown them with only ordinary care and found success, he may venture to plant more, but it would not do to advise planting acres of them where they have not been tested in growing of the vine. Concord, I have remarked on above. The Creveling, although before the people some twenty or thirty years, seems much like the Rome Beauty apple. To some it proves good, to others it is quite unprofitable, and therefore, although yearly talked of, few plant it. Hartford again proves so variable in localities, soils and seasons, that it seems to me it can hardly be commended for general planting. Soil and situation alone does not always affect this sort, season having very much to do with it. In my knowledge, about one hundred vines, one year, set and ripened their fruit, but dropped it from the stem badly. Another year, the same vines ripened and held their fruit middling well. The Rogers varieties are comparatively new. Like some of the cherries I described years since, they have served to meet rebuffs everywhere, except from those who had the vines to sell, and while they have been long enough before the public to have been fruited all over the States, I doubt whether more than five per cent. of any pomological meeting could say knowingly much about them.

With Charles Downing, both the fruit and leaves of Nos. 1, 3 and 9 mildewed badly this last season. Nos. 4 and 19 would probably command in fruit as much or more price in market than Concord or Isabella. While 3 and 15 give great promise, not only for table use, but for wine also. These two last are deserving extensive trial, and I hope it may be so extended with all the sorts, as to enable us in a few years to decide upon their adaptation to soils and localities. Sweeping recommendations of lists of fruits for general cultivation will not do—for while no hardy grape as yet known, equals a truly

well ripened Catawba, grown on calcareous clay or limestone soil, the variety is only adapted to particular localities. It is of no value in Massachusetts or Northern Central Michigan, etc., and the pomologists of these sections would laugh at the man who commended it for general cultivation. The selection of varieties, as well as the soils and locations where growing grapes as a business is intended, becomes a matter of considerable study, and requires thought. If for a market, and to be used at table, a very different sort possibly would be selected than where light, dry wine was intended to be made of the fruit. Distance of transportation would also be another item, dark colors and thick skins showing better, after being thrown hither and yonder by express companies, than light colors and their thin skins. Again, were red wines sought as the result, and wine only the object, a still different grape would be selected, and yet all would have to be gauged on their adaptation to the soil and section of country where designed to be grown.

The American Pomological Society are doing a good work in their preparation of a catalogue; but I should much like to see a collection made from letters of notes on fruits, from various horticulturists throughout the Union. At meetings few men say anything, and often those who could say, or write, the most valuable information as regards facts in culture, are left out altogether. But I am making my talk too long, and therefore will close by the quotations from Mr. Fuller's article: "Aiken grape, of which so much has been said at the West, is Isabella." "Haskell, from Michigan, is Concord." So Mr. Fuller thinks. I have carefully examined them for several years, and I think they are entirely distinct. Americans had better try them and decide; but be careful of whom you receive plants.

DESIGN FOR A COUNTRY HOUSE.

BY REV. P. D. OAKEY, JAMAICA, L. I.

THE plan of this house explains itself. It is in every way compact and convenient. It would be difficult to find any loss of space. The verandah, with its broken lines and clustered columns, gives a pretty effect to the approach of the house. By the main entrance all the rooms are easily reached, and the doors of the parlor and sitting-room are so arranged that, in case of large company, there can be free circulation from one to the other. All the rooms are brought close together, and though within a few steps of one another, by short passage-ways and doors, the smell of the kitchen and noise of one room is effectually excluded from the others. Every room, excepting the parlor, has a closet. The door of the sitting room, opening directly opposite the hall-door, which opens under cover of the piazza, gives, in the summer season, both air and a pleasant garden view. The tea room may be used as its name designates. For this purpose it has an ample closet, and but a step from the kitchen, though entirely shut off from it. But the sitting room is quite as convenient, and but few families of moderate means care or expect but that their dining and sitting-room shall be one. In this case, this house might be made a very snug village parsonage, and this room, as it is separate from other rooms, is of easy access by the main hall, or by the main path from the street, with its windows opening under, and ready access to the side piazza, be made a very neat library or study. The kitchen is a clear, square room, with no encroaching projections, but with a large wall pantry. Everything here is handy and convenient. The cistern pump is in one of the recessed

corners of the chimney, just where it ought to be, out of the way, and close by the range, where a pot of hot water is always expected, and where there is also a sink to carry off all the waste water. One door leads from the kitchen to the back stairs, another under these stairs into the cellar. By having this cellar door near the outside kitchen door, there is no tramping across the kitchen floor necessary to get to it, and the necessity of having outside cellar doors is obviated. The outside kitchen door opens under cover of a shed, which shed is in keeping with houses of this style, and greatly adds to the convenience of the culinary department. In this shed a stove can be used in the warm weather, by having a stove-pipe hole made from the outside into the kitchen chimney. When the main chimneys are being built flues from the cellar should be constructed with them, so that, if at any time desired, a furnace may be used. The cellar floor should be cemented.

This plan may be somewhat cheapened, and yet its convenience and general effect not materially altered. Making the parlor 14x20, instead of 22, and dispensing with

FIG. 55.—*Perspective.*

the hall between the tea and sitting-rooms, these rooms would be brought in immediate connection by a door opening between them, and then, if the family are so disposed, this would make a fine sleeping room, easily warmed in winter from the sitting-room. In this case, the door of the sitting-room, now opening into the rear-hall, would open directly on the piazza; and the door from the main hall will open into the sitting-room.

We think that the second floor affords as much sleeping room and as convenient arrangement as is necessary to meet the requirements of any ordinary family who wish to combine economy, taste and convenience. There are five sleeping rooms and a room for domestics in the story over the kitchen. An ample kitchen garret, very easy of access from the kitchen, makes an excellent stow-away room. A door between the kitchen garret and the main building gives the servant girl access to all of the upper floor, and at the same time, by a bolt or lock, entirely shuts off the kitchen from all other parts of the house. The chimneys are so disposed that either of the four principal sleeping rooms can

have a stove. Where rooms are used exclusively for sleeping rooms, size is not of so much importance, if ventilation is properly attended to. This is accomplished in these rooms by having stove-pipe holes near the ceiling, and pivot sashes over the doors. Thus, each room is well ventilated, without the occupant of the bed being exposed to the draught. The little hall room may have a door communicating with either of the other front rooms, and be used for childrens' sleeping room or lady's boudoir. Its window gives egress to the pleasant balcony over the veranda. The closets in the front rooms conform to the style of the building, and have a pretty effect by making recessed windows, under which cushioned seats may be formed, gratifying a principle both of taste and utility. These shaped closets will be in special keeping if the room is not a full story, but yields to a small curvature in the ceiling.

The style of this house is of the Rural Gothic order. It has a gable in front, under

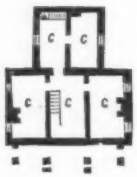

FIG. 56.—*Cellar.*

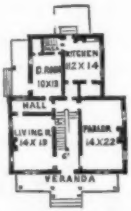

FIG. 57.—*First floor.*

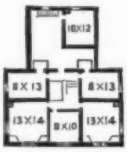

FIG. 58.—*Second floor.*

which is a Gothic window leading to the veranda balcony. It is weather-boarded, with sharp pitch, projecting roof, with cut shingles, and pendant barge boards in all the gables. The chimnies ascend from the ridges, and are topped with Scotch Garnkirk shafts, much preferable, the writer thinks, to our common cotta terra in exposure to the keen frosts of our northern winters.

This house, it is thought, combines simplicity in its purpose and construction—unity in its design, compactness and convenience in its arrangements, and symmetry in its proportions. Its foundation should stand about 2 feet 6 in. out of the ground when properly filled up all around. The posts of the main building should be 18 feet long, and of the rear 14 feet, and when correspondingly interiorly finished, it will make a chaste, comfortable home, gratifying to the taste, and in its first cost but very moderately burdensome to the pocket.

PLAN FOR IMPROVEMENT OF GROUNDS.

BY E. A. BAUMANN, RAHWAY, N. J.

WITH this, I take the pleasure of sending you a reduced design for the laying out of a small place, drawn for a gentleman in Bristol, R. I.

The plan includes about four acres, and lies at the juntion of two streets, a short distance outside of Bristol, with a very fine water front on the Narraganset Bay, in the southern direction.

The north-eastern and north-western boundaries subdivide the place from some small lots, with poor-looking houses on them, and therefore the whole arrangement had to be made in consequence.

The house had to be located at such a distance from the streets, as to allow space enough for ornamental purposes.—This space was arranged in a manner to produce the appearance as if the whole plan was a pleasure ground, the planting hiding the vegetable garden and all the buildings in the rear, from one corner on the west up to the most eastern extremity when there is only the width of the barn-yard left open.

The barn, stable, hen-house, green-house, as well as the vegetable garden, are all of easy access from the house, and, besides, they are in such communication with each other, that all the operations can be done without encroaching on the pleasure-ground.

The traders, viz., butcher, baker, &c., have an entrance through the barn-yard leading to a small turn near the kitchen, and will come hardly in contact with any

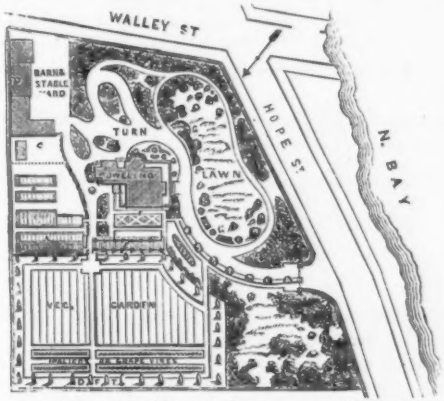

FIG. 59.—*Plan for Improvement of Grounds.*

carriage, for which there is a particular turn, more spacious, in direct connection with the barnyard.

To hide the vegetable garden from the windows of the south-west side of the house, there is an open grape arbor (an Italian pergola), with a fine display of climbers, and between this and the house, a regular small flower garden, for Dutch bulbs, and bedding plants.

Trees of large size have been employed in great variety all along the streets, but irregularly planted, and if kept as recommended, *i. e.*, with bare stems, they will shade the whole walk surrounding the front lawn, without obstructing the water view.

A row of tall deciduous trees follows the main entrance drive on one side, and some more trees of the same class are scattered single on the lawn, and on the patches surrounding the turns, casting some shade around the house.

Shrubbery of some ten to twelve feet elevation has been employed on the western corner and along the enclosure of the barn-yard, with low, flowering shrubs in great variety in their front, showing a continuous mass of foliage from the top down to the grass.

In connection with the tall trees planted from the main entrance to the barn-yard, only a single specimen of rarer variety, and some very low shrubbery, has been employed, bringing thus the show plants in prominence, and producing with the small shrubs a greater contrast.

The drives and walks are made exactly at the level of the lawn, the small size of the place admitting of an arrangement which in a larger one would not answer as well.

The vegetable garden is quite small; but in a suburban garden, as this plan really is, it answers completely for the smaller sorts of vegetables and fine herbs required every moment for the table; and near a city, such vegetables used for winter, or which may be kept in a cellar for a week or more, may always be procured in the market cheaper than they can be grown on such a place.

A border of dwarf fruit trees surrounds the vegetable garden. This border is of about 15 feet width, allowing in the rear a row of blackberries, raspberries; and among the trees, currants, gooseberries, and even strawberries.

Of border or edging on the walks in the vegetable garden, there is none. I suggested the walks to be raised above the ground, keeping them dry by carrying the rain water on the worked land, where it is more wanted than on the walks.

I have since seen gardens in which the walks were altogether left in lawn or sodded. I had always an aversion to borders of sods; but I confess that the practicability of sodded walks in a vegetable garden is a very good system, and I shall recommend it in the future.

On the south side there are two borders, with trellis work, intended for grape vines; these will answer very well in spring for early kinds of small vegetables.

I have no doubt that this design will be of some use in situations corresponding with the location of this place.

DESIGN FOR A GRAPE ARBOR.

BY E. A. BAUMANN.

The accompanying design for a grape arbor, in the style of an Italian pergola, I have already introduced in several places with success.

This arbor is more an ornament to a place than are arbors generally, which are intended more to hide nuisances, but which show them in the best way to everybody that comes near a house.

By the design, you will observe that the arbor is open on the front side, with a balustrade or panel work, of 3½ or 4 feet high from the ground..

The rear is covered with laths, 12 to 15 inches apart, for the purpose of training grape vines intended to run on the top, along the cross-pieces.

This arbor could be built of almost any kind of timber, and painted any shade, but a wood color, imitating oak or chestnut, would be the most suitable.

The upright lattice-work, running along the posts, is intended to give the posts a heavier appearance, and to tie up flowering climbers that will have to be trained length-wise along the upper piece of timber.

The horizontal pieces run across the posts, tying them together and supporting the laths, 2½ by 3½ inches, which are lying crosswise over them, and project some 15 to 18 inches out.

Vines dropping from the top will soon make the whole more heavy.

When I employed or introduced this style of arbor, it was either to shut out some objects outside the place, on parts of a small lot, where a group or a belt of shrubbery would not have found room enough, or to establish an ornamental terminus in the pleasure ground, and a separation between this and the vegetable garden.

With a well-selected collection of climbers, this arbor would soon be a very handsome feature in a place. Tall-growing varieties of climbers, like Wistarias, Clematis, Running Roses, &c., may be trained on the posts; and dwarfer sorts, like Honeysuckles, Akebia, Bignonias, Jasminums, the annual

varieties of Ipomaeas, Tropaeolums, &c., may be employed along the base.

In case this arbor should be placed on the boundary line of a place, the rear on the north side would not answer well for grape vines; but in that case, I should suggest to cover the rear entirely with the Virginia creeper, Aristolochia Sipho, or some other fast-growing climber succeeding well in the shade.

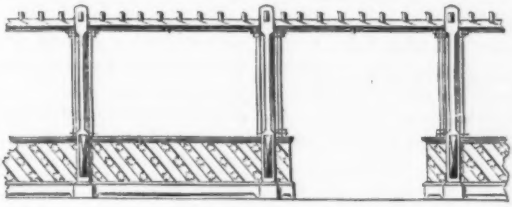

FIG. 60.—*Side View of Arbor.*

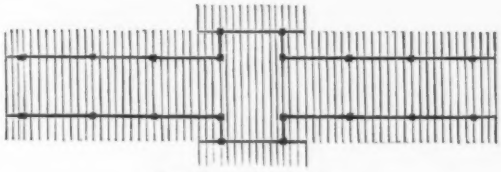

FIG. 61.—*Top of Arbor.*

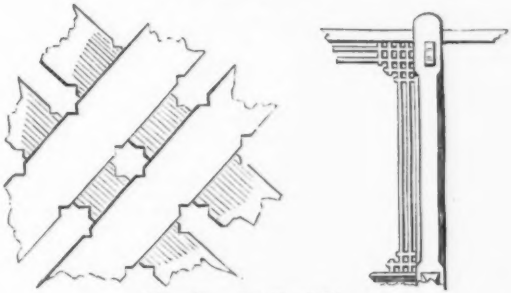

FIG. 62.—*Details of Arbor.*

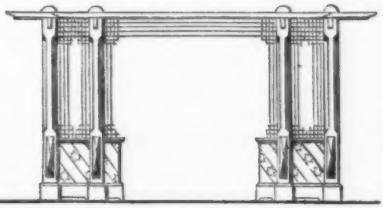

FIG. 63.—*Cross Section.*

RAHWAY, Feb. 24, 1866.

PEARS—GENERAL TOTLEBEN AND EMILE D'HEYST.

BY CHARLES DOWNING, NEWBURGH, N.Y.

Emile d'Heyst, a Belgian fruit; tree of moderate vigor. A healthy and good grower, but straggling, and not easily brought to a pyramidal form. It seems well suited to this climate. Young wood, fawn or light brown; rather slender. Fruit large, or above medium size · long calebasse form. Color light green, washed and waved with fawn and russet; becomes bright yellow at the time of maturity. Stem variable, but

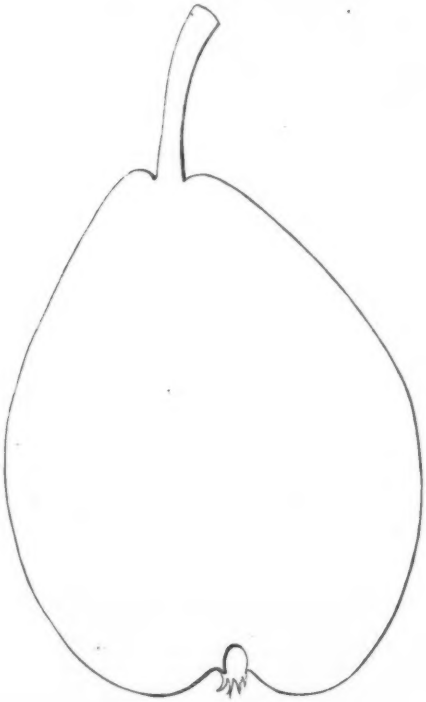

Fig. 64.—*Emile d'Heyst.*

rather long; sometimes fleshy; inserted in an uneven cavity. Calyx small, set in a deep narrow basin, surrounded by uneven protuberances. Flesh buttery, melting, very juicy; exceedingly fine, sugary, and well-perfumed (L. E. Berckman's MSS.) A very great bearer, and requires thinning to have the fruit in perfection. From all we can learn, this fine pear has given general satisfaction in this country.

Tree vigorous, healthy, and productive; a new promising variety, of foreign origin. Fruit large, turbinate, pyriform, angular. Skin greenish yellow, considerably netted and patched with russet, and thickly sprinkled with russet and brown dots. Stalk long, curved, inclined; inserted in a small cavity, sometimes by a lip. Calyx small,

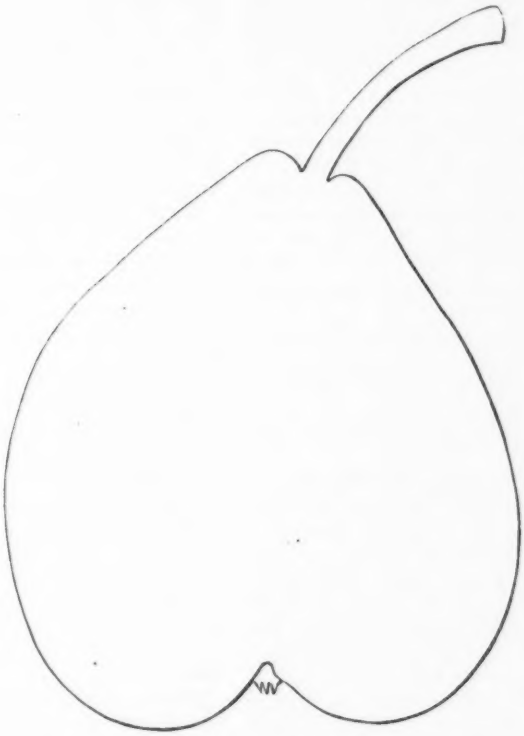

Fig. 65.—*General Totleben.*

open. Segments short, erect. Basin large, deep, uneven. Flesh whitish (often flesh-colored around the core), a little coarse, very juicy, melting, with a rich vinous, slightly aromatic flavor. Ripe last of October and November. A fine new promising fruit.

THE PROPAGATION OF THE DELAWARE AND OTHER HARDWOODED KINDS OF THE GRAPE MADE EASY.

BY HORTICOLA.

Some of the readers of the Horticulturist (see vol. xix, 1864; p. 61) may remember that I made vines grow which, during their passage from Germany to this country, had commenced pushing in the box in the absence of light. I left the asparagus-like shoots on the pieces of the old wood, which I planted, and succeeded in making grow. Mr. Peter B. Mead, the then editor of the Horticulturist, made the remark that I unconsciously had been making good plants. This hint was not lost upon me, for it induced me to make a number of experiments, especially last year, the results of which so far surpassed my expectation that I deem it my duty to make them known through this magazine. In describing them, I will dwell exclusively on the main points, omitting the gradual development and perfection, so far as it goes, of my plan.

On the 27th of May, last year, when the young shoots of the Delaware were from two to four inches long, I cut pieces from the ends of the last year's canes about two inches long, having a young shoot of the length indicated in the middle, or rather so, that each of the young shoots had from one-fourth to one-half inch *below*, and about one-half inch *above* them of old wood. I laid the old wood horizontally in my propagating bed of anthracite coal dust, so that the young shoots were erect at right-angles with the old wood, which was covered with coal dust a little more than one-half inch deep. I shaded them a little, and watched them regularly. I did not make any fire, relying on the heat of the sun, which is rapidly absorbed by the coal dust, and which warms it thoroughly to the depth of at least four inches. *Seventy-five* cuttings of the Delaware, made in this way, gave me *seventy-three* beautiful plants. They had such masses of roots as I never saw on plants propagated in any other way. It was astonishing to see how the young green shoots continued growing, just as if they had not been separated from the mother plants. Those propagators who use sand will succeed equally well with it.

I could give a whole catalogue of vines, cuttings of which, treated in the same way, gave similar results. It is not necessary to state here that soft-wooded kinds grow with still more certainty, *i. e.*, the Rebecca. Propagators are, in this way, enabled to make two sets of cuttings; all they have to do is, not to prune the canes of their vines so short as usual, in order to have wood and shoots enough by the middle of May. That vines do not bleed at that time when wounded is, at present, known even to the inexperienced.

In this connection I will give some account of other experiments, with results quite different from those related. Had I not been reminded by one of the readers of the Horticulturist that I had promised to report, I would, perhaps, never have done it. The circumstances had so entirely escaped my memory, that I had to make a little effort to recall them to my mind. I forgot them on account of the failure.

Several years ago, I planted in the Fall a large number of cuttings from the Delaware, the Diana, and other kinds, in the open ground, covering them at the approach of winter sufficiently to protect them.—From what I had read about this method I felt so sure of the result hoped for, that I did not hesitate to treat so, a most remarkable variety of the wild grape, which I had found on Snake Hill, in this vicinity. Its leaves were the most elegant and ornamental of any vine that I ever saw. They were full lobed, but so deeply and gracefully cut, that they resembled the five fin-

gers of a human hand. In the spring following all my cuttings began to grow, but the young shoots soon drooped, and the cuttings died. When I saw the danger, I took up three that were still green, and planted them in a hot bed, but to no purpose. I did not save a single cutting of the wild grape; of the others, some made roots, but as there were so few of them, I became disgusted, and did not take care of them. I think I was very careful in planting and protecting the cuttings; still, I may have neglected some thing, though I am not conscious of it. At all events, my experience was such as not to warrant the repetition of the experiment, and I cannot conscientiously advise anybody to risk any valuable kind in trying it. *

Cuttings of the Delaware put in water, and placed in a warm room, *i. e.*, a kitchen, for eight or ten days, and planted in the open ground when the weather grows warm, root uniformly, and make fine plants. From the first year I tried it till last season, my success has been the same. I do not remember having lost a single cutting in that way, provided I planted them in compact clayey soil; in porous soil they do not grow so well.

* Unfortunately, the wild grape mentioned was destroyed. The attempt to take it up failed, the roots having fastened themselves in the fissures of the rock. So the stem of the vine was broken; all I saved was the cuttings, which I lost as stated. I visited Snake Hill twice every year since I obtained the cuttings, hoping that the stump might send forth shoots again; but I have to bear the disappointment—the vine is dead.

PLANTING STREET TREES.

Nothing is more obvious than that by the judicious planting of trees in the embellishment of country homes and country and village roads, the value of property is much enhanced, and comfort, elegance and health greatly promoted.

Buildings that are mean in appearance, homesteads dilapidated and storm-worn, are relieved, and their defects almost hidden to the passer-by, if surrounded by beautiful shade-trees. Roads and streets uninteresting and bare, hot and dusty in summer, dreary and cheerless in winter, can be converted into pleasant avenues and highways of enjoyment to the traveler and weary pedestrian, if bordered with desirable trees.

Then the tastes of the citizens will be more refined, and their thoughts and pursuits more congenial with the nature of their surroundings, and the language of future generations will bless the memory of those enlightened philanthropists who planted them.

The trees that we plant around our homes become deeply woven in our memories, and we realize the sweet satisfaction and pure enjoyment of seeing the trees we have watched with care and hope growing thriftily, leaving lasting mementoes behind us that our lives have not been spent in vain. In planting trees we require skill and attention to the laws of vegetable life. Enthusiastic love of nature's gifts will not make a tree grow with success if wrongly set out, or treated with neglect.

Let us plant them nearly in the position they grew in before, their roots nicely spread out, and the earth packed around them so as to leave no space unfilled. And then, if the soil is not good friable loam or mould, we should procure such to place around their roots, and not fill up with rich or unfermented manure. Let us feed the roots gradually by spreading it on the top, and keeping the soil moist and mellow by mulching with refuse straw-stalks, or anything that will be of service to kill the grass and prevent the earth becoming hard and dry around them. We require only the most hardy trees to plant by the road, for the soil is generally of poorer quality, and they will be more exposed, than when planted on the lawn or about the house.

Shade-trees, combining a pleasing variety of colors and habits of growth, are the most

pleasing to the eye, for if an avenue should contain but one variety, and that the very best, they will be monotonous and dull. The winter landscape is greatly enlivened by the presence of evergreens, and they are beautiful everywhere, but unless extra car is taken few will plant them by the roadside, for who can tell how soon a vagrant-cow will, in frenzied mood, make a sightless, forlorn wreck of the finest evergreen?

But the Pines, if of large size, can be transplanted by the road, and the lower limbs trimmed off out of cattle's reach; but the best mode, we think, would be to make a fence around, and plant medium-sized trees, and in a few years cut off the lowest limbs. They grow well on poor soil, and will present a fine contrast if a few are intermingled with deciduous trees.

We are all aware of the reputation of the American Elm for street planting. They seldom make much shade until they are fifteen or twenty years old, and he that is in a hurry for shade around his place, and pines for the leafy canopy of trees near his dwelling, will have to wait too long for the Elm. They linger sadly if planted in light, poor soil, or if we allow their roots to be encased when young with a stiff mass of sward. Planted alternately with bushy trees, they give the finest effect. For light and rather dry soils we have found no better tree than the Sycamore Maple. It is a rapid grower, of fine form, and easy to live. The Norway Maple is often considered the most beautiful tree we possess. Covered with fine yellow blossoms in spring, and draped with light and graceful foliage in summer, when the frosts of Autumn chill its leaves, it yields slowly and unwillingly to its power, presenting a pleasing contrast of green, yellow, and brown shades mingled together. With us it is not as fast a grower as the Sycamore, but will better withstand hard usage, and thrive in a greater variety of soils. On good soil the white or silver-leaf Maple is the most rapid-growing desirable shade-tree. It is a native of Pennsylvania and other Middle States, and is so well known and extensively planted that further notice is not necessary. Our White Ash and European Ash are well adapted to planting roads, and while they are easy to make live, and beautiful in form, their wood is of great value. The Linden tree has long been a favorite ornamental tree, from the fine conical form it assumes, and its ease of cultivation. We much prefer the Basswood, or American Linden, to the European. It is a more rapid grower, and its leaves, unlike the common European, retain their green color through the season. The white, or silver-leaf, is the finest species, but they are scarce and dear. The Tulip tree, in rather moist situations, or where the ground is kept mellow, as in the nurseries or woods, is the noblest forest tree of our country. They cannot be successfully transplanted when large, but their tall, straight trunks and bright, green leaves are objects of interest wherever we meet them. Sometimes the Liquid Amber, or Sweet Gum, could be planted with low growing trees, as they are of rapid growth, especially in wet situations. Their star-like leaves, when dyed with the rich, red tints of autumn, are among the gayest trees of the forest. No tree exceeds in grace and freshness the European Larch, in its new vernal dress. Although it looks rather dingy in Autumn, its spring and early summer foliage is so refreshing and lovely that we would plant some of this kind by roads and village streets, and protect them by stakes if small. In heavy soils the Deciduous Cypress succeeds finely, and is an ornament in the fall and early winter, when other trees are bare of foliage. In limestone countries and in clay soil, or where there are springy places, the Sugar Maple is one of the finest shade-trees we have. On dry and sandy oils other trees succeed better We think that these will be sufficient for most persons, although there are other trees adapted to street planting, such as the Ash-leaf Maple, Black and Balsam Poplar, Black Walnut, Butternut, and, by the springs and water-courses, Weeping Willow. I. H.

North Hempstead, L. I.

CORDON DWARF APPLE TREES.

BY E. FERRAND, DETROIT, MICHIGAN.

THERE is an innovation which deserves to be introduced in American gardening, that is, the dwarf apple trees cultivated for edging the walks of vegetable and fruit gardens. The idea of growing the apple tree in this shape originated some ten or twelve years ago in France, and is carried on there now on a large scale, very few gardens, and even the largest nurseries, being without their walks edged with those beautiful trees. Cultivated under this form, the apple tree can be introduced in a garden of the very smallest extent, where otherwise it could find no room.

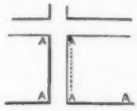

FIG. 66.—

Do not suspect that in putting forth this innovation I pretend to propose a substitute for the old standard apple tree. Very far from it. But I intend to present a novelty which is very interesting in many ways, and which will pay for the trouble it may give by the fruit alone, without taking into account its merit as a very beautiful ornament.

FIG. 67—*Tree pruned for planting.*

FIG. 68.—*Tree with its limbs tied to the wire.*

The dwarf apple tree *en cordon*, as they call it in France, must be of necessity budded or grafted on Paradise, the Doucin being even a too strong grower; but here it must also be remarked, that the Paradise should be on its own roots, and not, as some of my nursery friends have it here, a scion of Paradise grafted on some better growing stock.

The accompanying drawing will explain how to plant the trees, and will show the effect presented after two years from planting.

The first thing is to establish a strong stake at each end of an unbroken line, on the edge of a walk, as shown from A to A, *Fig.* 66, leaving these stakes about a foot above ground; then, from the top of one stake to that of the other, a wire is tightly fixed, which is destined to have the trees tied to it; the trees are planted on the line of the wire from 5 to 7 feet apart, according to quality of soil; two limbs of the tree are then tied to the wire, and all the other branches cut off, and those remaining shortened to eight or ten buds for the first year; or better yet, the tree is cut off to the height of the wire, and, as it grows, the two upper branches are tied to the wire.

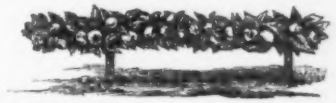

FIG. 69.—*Apple Trees en cordon Three Years after planting.*

In order to tighten the wire (none but sound galvanized wire should be used) when it becomes loose by the action of the sun or otherwise, a small instrument is used, which is also employed in the vineyards, and will be described in another article.

The only care these trees require is to have the wood pinched very often in summer, say every two weeks, excepting the two branches destined to follow the wire, which are left to grow at will, but tied to the wire as they need it. The

pinching causes the buds to swell, and determines the production of fruit buds, so that the second year the tree is pretty well filled with fruit. When the trees reach one another by their extremities they are grafted together, so that from one end of the wire to the other the trees are but one.—These trees are then allowed to produce no more wood, and need only to be severely pinched in.

The apple trees thus cultivated make a neat and very ornamental garland of fruit and foliage around each square of the garden. I had once under my personal care about seven thousand feet long of those cordon apple trees in my father's nursery, and we never missed a heavy crop. I am experimenting the same here in my own garden with trees that I received from France for that purpose.

More could be said about these beautiful trees, but I do not want to abuse the kindness of the editors, and have merely pointed to the principle. I will add—no trees older than two years from the bud should be used for this purpose.

GRAPE CUTTINGS FROM MODERN HISTORY.

BY JOHN S. REID.

In our former articles we endeavored to confine ourselves to the culture of the Vine and manufacture of Wine as known and practised by the Ancients; now we intend to speak more fully of the various kinds o grapes known to the Moderns, passing over that part of the history of the grape which may be found in the "Ana" of the Middle Ages, as we were unable to find any sufficient data to speak from during that period, although we learn that some of the provnces of Rome, now embraced in the Departments of the French Empire, cultivated the vine during the first century, especially the middle departments, when Domitian was Emperor, at which time the celebrated Edict was issued, destroying the vineyards in the provinces, and prohibiting any new vineyards being planted in Italy. This prohibition continued for almost two centuies, when it was revoked by Probus, and new vineyards were planted with the choicest vines from Greece, Sicily and Rome, in the Gaulish Provinces of Languedoc, Provence, and Gurinne.

Although the cultivation of the vine in France dates back to the palmy days of the Roman Empire, the climate of Europe was not such as it now is, but was much colder, and seldom matured the fruit of the grape north of Cevennes, so that great armies, during the winter, passed over the Rhine on the ice, which could not be done during the last five hundred years. Pliny, Strabo, Columella and Durmimas make frequent mention of the vineyards of Narbonnese Gaul, the latter of whom alludes to the mode of cultivating the vine by the Aquitani, on the banks of the Saone, supposed to be the modern *Cote d'Or*.

The wine of this time was also much relished at Rome, and those of Dauphine, Marseilles and Narbonne were esteemed the best; but the most celebrated were obtained from the Muscat of Languedoc, and a rich and violet scented grape of Vienne.

During the 13th century, the wines of France had become famous over all the civilized world, and a very amusing fable, called the Battle of the Vines, was then published, in which the different vintages or classes of wines were made to pass in review before the French monarch, each, contending for the palm of honor.

But the choicest wines were the product of the vineyards owned and cultivated by the Church of Rome; for as the clergy were, during this period, almost the sole depositaries of learning, so they were among the first to improve the cultivation of the

vine, and to attend in person the manufacture of the wine. Kings and Nobles then vied with the Church in producing this glorious beverage, whose motto was quality, not quantity, and the monks of the Cistercian Abbey, then the owners of the celebrated vineyard, Clos-Vougiot, containing about 80 acres, were satisfied with twenty hogsheads, which now, under different hands and management, produces not less than fifty.

For many years the rival wines of Burgundy and Champagne contended for the Bacchic crown; but not until the coronation of Louis XIII, in the year 1610, did the latter acquire the pre-eminence, since which no rival has been able to displace the wines of Champagne, which were decided, in 1778, by the Faculty of Medicine in Paris, as being the choicest vintage in France.

If any of our young readers would place before him the map of France, and search out the several departments and provinces referred to in this paper, he would find himself much benefitted by the operation, and have a clearer idea of their locality and relative situation to the great wine region of Europe.

The culture of the vine embraces generally the region of Olives. In France, from near the mouth of the Loire, a line of limits extends in the direction of the Rhine, passing a little north of Paris, and terminating near Dresden. It then returns along the frontier of Bohemia, to its point of crossing the Rhine at Coblentz, covering the valley of this river and the Lake of Constance, in Switzerland, traversing the Alps in the middle of the Canton of Valais, following the declivities southward to Venice, to return through Lower Austria, Hungary and Wallachia, eastward to the Crimea. These limits show a large extent of country on which the vine is capable of cultivation and of maturing its fruit.

Another writer commences his point at lat. 47° 30′ on the Atlantic coast of France, running to lat. 49° in the interior and thence to Coblentz, lat. 50° 20′ on the Rhine for the East. In Germany, it does not extend beyond lat. 51°, and its true limits are much under these figures. Bordeaux, Dijon and Manheim would fairly represent France, or the extent of the limits of the wine grape in that country.

Champagne, within the Department of Marne, is entitled to the honor of giving its name to the most celebrated wine in Europe, and the vineyards of Verzenay, Mailly, Raumont and Sillery situated north-east of Paris, at the north-eastern termination of the chain of hills separating Marne from Vesle, take the first rank.

The average annual value of the wine crop of this department is about ten millions of dollars, the product in gallons being about forty-four millions — one-fourth of which comprises the Champagne quality; the rest are red and white wines of superior quality.

This wine is made from a white grape, peculiar to that province and its soil, and although imitated by others, never surpassed by any.

As France takes the first rank among the political powers of Europe, so, in like manner, it exceeds them all in the cultivation of the grape; and indeed it would be somewhat curious to trace the seeming connection between the great Empires of the world and the vine—not that we believe that there is any necessity in their connection, but the singularity of the alliance has more than once occurred to our mind. Apart from the great commercial, mechanical and agricultural Empire of Great Britain, France has no equal in Europe, and in the cultivation of the vine, and the manufacture of its glorious juice, she is far ahead of every other nation, either of ancient or modern times; but it is not alone to her position as a great maritime and warlike power that she has acquired pre-eminence in this; in our opinion, it is to her climate and especially to her soil and institutions, that she is indebted for the high station she holds in this respect.

Bounded by the Mediterranean Sea and the Pyrenees Mountains on the south, in lat. 43° north, with the great Atlantic on the west, to which her rivers chiefly flow, and her mountain ranges tend—she is highly fitted for the cultivation of the grape vine, lying some 5° within the region generally awarded to the olive, the vine and the orange.

But even within sunny France, the vine is a capricious mistress, preferring certain provinces, and sometimes certain districts within one province, following the course of her mighty rivers, and flourishing only along the sides of her sunny hills. Thus, the mountains of Auvergne, separating the basins of the Loire and Garonne, are evidently the remains of extinct volcanoes; whilst east and south of this volcanic mass extend the Cevennes for about 200 miles, the northern portion of which runs north and south with the Rhine on the east; whilst the Jura mountains, composed chiefly of limestone, form a barrier between France and Switzerland.

Now, not only are the best wines and richest grapes produced within and along these mountain ranges and shallow valleys, but it is almost impossible for the vintner to grow them in quantity anywhere else. Thus, the wines of Champagne, north and west of Paris, in lat. 49°, take the first rank; yet the same vine refuses to bear in Central France, several degrees farther south.

Again, some small vineyards are found enclosed with stone walls—on the very limit of the grape culture—like oasis in the desert, so well marked and defined, that their area commands fabulous prices. Thus, the Clos-Vougiot, which contains about 80 acres, produces wine of such excellent quality, that its revenue was sufficient for the expenses of a noble, and the Romanee Conti is produced on a piece of ground not exceeding seven acres; whilst Chambertin, near Dijon, is the product of only 65 acres.

We make these remarks to counteract the off-hand opinions of a great many grape culturists that the grape vine of America, being indigenous to America, will grow and produce, over as wide an area of country as the apple or the pear; and even Mr. Fuller, in the last January number, promulgates this idea. But we do not believe in it; the Vitis Vinifera of Europe requires a peculiar climate and a peculiar soil, and where the best wines are produced, the soils are, for the most part, light black or red loam, mixed with the *debris* of calcareous rock; and so in our own country, whilst the limits of the culture of the grape extend from the borders of the Rio Grande at El Paso, to the great Lakes of the north; still, there are some places within this vast compass where it will not flourish, whilst there are others where it delights to fruit and multiply.

But let us examine some of the French statistics for wine, and compare notes with the several Departments of that Empire.

The French wine crop of 1845, 20 years ago, stood thus in some of the Provinces:

Champagne	43	mill.	Gallons.
Burgundy.....	62½	"	"
Loraine	49	"	"
Languedoc 144		"	"
Provence	68	"	"
Guienne & Gascony	182½	"	"
Samtonge	63	"	"
Orleanois	37	"	"
Isle of France	37	"	"

These are the leading Departments. The total crop from all was about one thousand millions of dollars.

Now, if we refer to the rank which each generally takes in the wine market of Europe, we shall find them to stand thus:—Champagne, first in quality and highest in price; Burgundy, long the rival of Champagne, is only second, and in some instances is preferred—such as the Romanée Conti, frequently bringing fabulous prices. The celebrated vineyards on the Rhine, such as the Hermitage, Côt Kôtire, Condrien, and St. Colombe, are so well known that their

product is found in every wine market of the world.

A French gentleman once had in his cellar some of the wine of this department, over 200 years old, made from the red Muscadine, which grape is highly esteemed for wine, on account of its strength and aroma.

In Gascony and Guienne, the most celebrated wines are the Medoc, Graves and Paulus, such being the product of different vineyards and districts. Thus, the Paulus vineyards are situated on the banks of the Garonne, near Chartons; the Medoc is from the vineyard of Latour, although the lightest and choicest is from the Lafitte vineyard, and the Graves wine is the product of the grape on the gravelly soil on the banks of the Garonne. These are regarded as the most perfect wines in France, and the highest price is paid for the red.

But, as a general rule, the wines of Southern France do not hold equal in quality to those of the Northern Departments, although in quantity the product is nearly double; and in a commercial point of view, as an agricultural value to France, the wine crop is only exceeded by the wheat.

The best of the Champagne wine is said to be made from a small green or whitish-yellow grape, although in that department both white and red grapes are cultivated, and white and red wines made of the most excellent quality.

In Burgundy, the true Burgundy grape of our graperies is that which produces the best wine in that Province. The berries are roundish, oval, average size, and deep black; juice, rich and sweet. The Black Frontignan is also much used in the South of France, and used in producing the Muscadine wine. Berries medium, round, and black.

The Royal Muscadine, or White Chasselas, is considered the second best white grape of France, and goes by a hundred names. The bunches are large and shouldered, berries large, of a greenish-white, turning to amber color in the sun; flesh rich and delicious.

The Virdelho, or Madeira wine grape is also cultivated in France, the bunches and berries of which are small, rich and excellent, semi-transparent; color, yellowish green.

The White Muscat and the White Frontignan are also cultivated in the South of France extensively; so are the Red or Grizzly, Frontignan, and Red Chasselas; but the White Shiraz, of Persian nativity, is the grape from which the celebrated white Hermitage wine is made, and is said to be the finest white grape in France, superior to the Royal Muscadine; whilst the red Shiraz is the grape from which the red Hermitage is produced, ranking side by side with the white. These are said to be small grapes, almost without seeds, and very delicate.

So much for a bird's-eye view of the wine and the grapes of La Belle France.

HOME CUTTINGS.

A happy New Year to you all, editors, contributors, and readers, and if in the past one single day has been spent in vain, let us in the present improve our industry, so that we will not only secure properly each fleeting moment, but redeem that which has been lost.

The stormy wind of January is howling around me as I am now writing; the vineyard looks bare and cold, the earth is covered with the frost of winter, and all is desolate and lone; but a few months, and Spring, with her mantle of green, will be clothing the orchard and the vineyard; the young buds will become alive again, and break forth into joy and rejoicing at the voice of Spring; and the air will become fragrant with the perfume of the vine-blossom, a welcome harbinger of a glorious vintage.

So may it be; but for these two years past, my vineyard has produced nothing but blossoms. True, the fruit has always set well; but the mildew and rot came and

destroyed the prospect, leaving nothing but the brown leaf and the unripened wood.

Well, be it so. I have again laid my choice vines down, and trimmed all of my more hardy. I have prepared for a year of hope and promise, and shall not despair, even although there should be no herd in the stall, and the vine should not yield its fruit.

My vineyard (Catawba) is about fifteen years old, and is planted on a gently-sloping hill, inclining to the east and south. My other grape vines range from one to six years old; and I have a few of almost every variety of acknowledged merit. I have two seedlings—one blueish-black, and the other white—of promising appearance; both stood last year's rot and mildew unharmed, but were protected by a brick wall. I have left *them* out uncovered this winter, in order to test their durability; and if they are hardy as they are good, I know that I have a white grape superior to Dr. Grant's Anna, and a black, in bunch and berry, superior to the Concord.

NOTES ON THE MARCH NUMBER.

Discourse of Winter.—A readable article, pleasant, but as I deal mostly in the plain practical adaptation of methods relating to subjects in moral life, and not much in sentiment, I must pass without further remark to the

Design for a Country House.—Every thing that can help to elevate and improve a taste for rural architeture, and the pleasing embellishment of the house buildings, has my most hearty assent.

The design here given has much in its favor—but the author must permit me to question the adoption of such style for a level lot of 65 by 200 feet on a village street. To me there is much in association, and although it is said "contrast makes harmony," I cannot harmonise pointed gables, etc., with flat and tame surroundings of scenery. In selecting the architectural features of a building, I think, the country surroundings should be carefully studied, and the architecture, as well as the grouping and style of trees to form its border and back ground sought for, and made to assimilate with the natural face of the immediate surrounding country.

I have never yet felt that a style of architecture, etc., suited to the bold, rocky, romantic character of the Hudson River Highlands, was equally adapted to a plain, level, sandy country.

With the interior arrangement of this plan I shall not quarrel, as it is well known hardly any two families have the same wants or actual uses of rooms. I will only say, that in designing some hundreds or more of houses, I have found nearly all to want a bed-room on the first or main floor, and that in small houses, in order to effect it, some one other room had to do double duty.

Peach Trees in Pots.—Apropos to the season—for unless we have peaches grow in pots, under glass, I fear me, we shall have none this year. As our country increases in wealth, more and more attention will naturally be given to the luxurious; and what among all the luxuries surpasses that of having the rich fruits of the earth in a ripe and perfect condition always at command?

The writer of this article has so plainly given the course to be pursued, that it would seem any one of ordinary sense could take it up with success. Orchard houses and winter garden conservatories—not greenhouses,—I hope to see increase rapidly; because our country has wealth to support them, and because a daily association with plant and fruit tree, summer and winter, refines and improves the mind.

The Currant Worm.—A good description—but will not syringing the plants destroy the worm? It is so said. I have

never had any trouble with the worm, although I have over a thousand bearing currant bushes.

Antirrhinum, *Silver Belt*, New Seedling Carnations, New Pear—Mary, and the Reading Pear.—Here we have a list of native Americans of no mean pretensions, and deserving the attention of every amateur flower or fruit grower.

Plan for Improvement of Grounds.—In the main features the designer has been very successful, and I have no doubt, the place as he left it, would hardly be recognized by one who knew it ere he put "his cannie hand" upon it. It is so much easier to criticise than to create, that I must beg pardon when taking the liberty of saying that the group made to screen the stable yard from view on the appoach, does not appear as effectual. I should have made but one entrance to the approach from the stable, and thrown in my trees, etc., so that no direct view could be had of the stable from that road.

Diagonal Training in Vineyard Culture.—We are fast growing to be a grape growing country, and at this time, when hundreds of thousands of vines are being planted, it is doubted by many, whether any present work or general writing on grape training, etc., is "*just the thing.*" The diagonal training is an old practice, and in the renewal course of many of our Western vineyards is often adopted. Mr. Balch may, however, give us something new, and we therefore wait, ere further remark.

What we now want is a small, practical work, taking each distinct variety of grape, designating the soil best suited to it, and giving modes and their results of training and pruning—for while one practice and soil may suit Delaware, it is well known the same practice and soil does not equally well with Isabella, etc. He who prepares such a hand-book as, to me appears, now wanted by the people, has no light task to perform; for he must be well acquainted with all varieties of hardy grapes, and have been with them in varied soils, and observed many modes of pruning.

Gardens and Parks of Germany.—I have nothing to add, only that I read these descriptions with pleasure and instruction.

Greely Prizes.—A difficult task had that committee, and as they are all honorable men, and good judges of fruits, it is hoped they are satisfied with their own work. Of one thing they may rest assured the fruits recommended are reliable, and cannot fail to please the growers over a large portion of our country; but there are persons who may be permitted to doubt the infallibility of any list of fruits to plant in all the varied localities and soils of our States. I am one of those persons, and while I concede favor to any man who shall aid public good, I must think corrected list of fruits, made by old practical fruit growers, in various section of the country, are more to be valued by the tree planter of those sections, than any *premium* award like the Greely one.

Reuben.

SHOULD PLANTS BE "CROCKED."

BY PETER HENDERSON.

I see I am taken to task for my opinion on this matter by my friend, Mr. Cowan. I am glad that he questions the propriety of my practice, as it gives me an opportunity to state another reason or two against what I believe to be a useless and absurd waste of labor, in using the so-called "drainage" in pots, even in growing Mr. Cowan's Azaleas, Camellias, Heaths, Acasias, or Terrestrial Orchids. I have grown *all* of these (with the exception of the orchids) *without* "drainage," and have had

them in as fine condition as ever I had roses or soft-wooded plants by the same method; and how I grow these, many of the readers of the HORTICULTURIST can decide.

I am astonished that Mr. Cowan should cite terrestrial orchids as plants that could not be grown without the inevitable pot-shred. He surely remembers that, in his botanizing days, Orchis Maculata, Listera, Liparis, &c., &c., grew in *marshes* in the British Isles; and if he ever indulged in the science on this side of the Atlantic, found Platanthera, Calopogon, Arethusa, and many other *terrestrial* orchids only in the *swamps*. Then, in the name of common sense, why does he think it indispensible to grow his Bletias, Calanthes, Cyprepediums, &c., without "drainage?" for it requires but little botanical analogy to know that they, too, have their habitat in the swamps of the tropics. I have no doubt whatever that Mr. C. grows all these varieties finely, as he does everything else that comes under his hands; but he must look to some other and better reason for his success than the few pieces of broken pots or charcoal that he has placed in the bottom of the pots.

I once knew an old gardener that, when he put in his cuttings of carnations or pinks, always put in a single grain of oats with each. The oats grew, and so usually did his cuttings; and great credit was given to the oats for their agency in producing the desired result. This practice is not quite so common as that of "pot-draining," but I do not believe it to be one whit more useless or absurd.

The great misapprehension is, I think, in *where* the soil is drained *from*. Mr. C. does not mean to say, surely, that *all* the superfluous moisture is carried off from the *bottom* of the pot. He can satisfy himself about this with a simple experiment. Let him take a plant, say in an 8-inch pot, that is in a condition requiring water; let him pour in, say a pint, or as much as it will take; let him observe what *proportion* of the water is absorbed by the soil, and what proportion has drained through the bottom. I think he will find that but a very small portion, if any, will pass through the drain hole. Now, I contend—and this is the gist of the whole argument—the *drainage of the soil is through the porous sides of the pot*, and not through the bottom, as that portion is usually excluded from the air, in consequence of its resting on its bed of sand or ashes, or on the board of the bench. Did we grow our plants in glass or glazed pots, then drainage might assist, as the water would have only one point of escape; but we don't do this, and our porous earthen pots give many hundreds of drain holes in each.

Mr. Cowan anticipates for me a "whipping," for my radical views in matters horticultural, from the English journals. I truly believe that my veneration for the opinion or the practice of our English cousins is not so great as that of Mr. C.; for I believe that, in many practical working operations, they are far behind us, particularly in commercial gardening. Have we any nurseries, not only in England, but in Europe, worked as cheaply, profitably, and well as those of Rochester? Or any graperies that ever excelled (on such a large scale) those under the supervision of Mr. Ellis, of Hart's Corners? I think not; and yet, in the practice of both, you will find far more radical changes than that which I advocate in the culture of plants in pots.

Even the famed market gardeners of London might take a few profitable lessons from those in the neighborhood of New York.—For example, all their gardens are worked by the spade, a plough and harrow would be like sacrilege in a London market garden—I have no doubt Mr. Cowan would view it as such in his—yet I have worked nearly thirty acres in market gardens for upwards of eighteen years, and have long ago come to the conclusion that the plough and harrow are *far better* pulverizers of the soil than the spade; and if Mr. C. has any doubts on this subject, I extend him an invitation—not to see orchids, for I have none

of these—but to compare our vegetable crops with those in his gardens at Matteawan, which I have no doubt are religiously worked with the spade.

It is wonderful with what tenacity the human mind adheres to custom, no matter how obvious its absurdity is shown to be.

Chambers tells us that in the year 1720, in an isolated community in the south of Ireland, the only known manner of attaching horses to the plough was by the tail; and that, when this barbarous practice was stopped by legislative enactment, a serious riot ensued.

I think it very likely that if Mr. Cowan had been an Irishman, and lived in 1720, he would have fought desperately for his "rights" in doing what he pleased with his "oun baste."

South Bergen, N. J.

NOTES ON GRAPE-CULTURE.

BY H. L. YOUNG.

HAVING taken considerable interest in the cultivation of the vine, and having for a few years past occupied myself in the care of a small vineyard, I send you some observations on grape-culture as I have found it in my experience.

The vines are mostly Concords, planted upon the southerly slope of a low hill, and looking a little to the southeast. I have in addition a few vines of each of the newer kinds that are competitors for public favor. My soil is a clayey loam, underlaid by rock; in making the borders for the vines I was obliged in several places to excavate this slaty rock in order to obtain a sufficient depth for the plants. Towards the foot of the hill I have some Concords in a soil both deep and rich, and inclining to moisture. I have found that vines on a dry sub-soil, though it may be shallow, do far better than those which enjoy a rich soil, but moist. I would not ordinarily attempt to raise the later grapes, such as the Concord, Isabella, and Catawba, unless entire exemption from moisture could be secured. My crop last year was a good one—I may say very good, considering the tendency to mildew, which so generally prevailed along the line of the Hudson, from Poughkeepsie and vicinity south to New York, and through portions of New Jersey. I did not suffer at all on my grounds from the mildew of the leaf, and but little from the mildew of the berry. My Catawbas, however, were much affected by the rot; those in the garden, on vines growing in a soil enriched by a deep and thorough culture, were totally ruined. Two or three vines on the stony hillside produced as sweet and as beautiful specimens of this grape as I think the West could furnish. Could such a product be relied upon every year, with any degree of certainty, I doubt if any new sort could supplant the Catawba as a late grape. During previous years I have had the rot to a small extent on the vines last mentioned—that is, on the hill—but never to the extent that it has appeared on those spoken of as in the garden. I should here mention a Catawba vine which I have running high up into two cherry trees, which, although growing in a very rich and moist soil, nevertheless perfects its fruit almost every year. It is true the bunches are small, and the berries are not very thick on the bunch, nor are they of very large size, but still the grapes are, on the whole, quite fair. For several seasons I had attempted to confine this vine to a trellis, but finally its vigorous growth carried it to the neighboring trees, and I let it go. While it was confined to the trellis I never obtained any ripe grapes; the rot always destroyed the fruit before maturity. Since reaching the trees it has produced good fruit quite regu-

larly. I attribute the change to the greater degree of light and air obtained among the branches of the tree, and it may be owing also to the greater height of the fruit above the damp air which rests at times for a few feet above the surface of the earth, increasing in density as it approaches the ground. I intend to try still further this experiment of planting the Catawba by trees, and with this view I have just transplanted two vines from the garden into a dry, rich soil by the side of trees. This transplanting I have accomplished by means of a frozen ball of earth attached to the roots, just as we now commonly transplant trees in winter. In this way a vigorous vine is obtained and made to grow where a young and feeble vine might not readily succeed—that is, under or very near the shade of a tree. I transplanted in this manner, three or four winters ago, two Concord vines, and upon these I have raised since some of my best fruit. This is an excellent way of transplanting layers. I would not advise planting by a tree any variety of grape subject to depredation by birds. I had a Northern Muscadine vine trained on a plum tree; depending from the tree on every side, and thick with reddening clusters, it was a beautiful sight but as the grapes ripened, the birds were attracted to them, and no amount of attention was sufficient to prevent the almost entire loss of the crop; hardly a perfect bunch was left: but more of the birds hereafter.

I used last season on some of my vines the bellows for throwing sulphur, recommended in the March number of the HORTICULTURIST, 1865, by *Horticola*. I prefaced the use of the sulphur, with the wash composed of a solution of salt, saltpetre, etc., according to the directions. The vines were dusted with the sulphur four times, beginning with the appearance of the leaves, and ceasing at the time the berries began to color. I had no mildew of the leaf on any of my vines. There was a trellis of Isabellas, which received one coating of sulphur late in the season, and many Concords which were not dusted at all; the leaves on these also remained perfect, as well as the leaves on the vines thoroughly treated. My Delaware vines retained their foliage until the last, and the fruit matured; the crop however was not abundant, and the vines themselves not very vigorous.

Some cultivators in my vicinity lost the leaves of their Delawares from mildew very early, and of the masses of handsome fruit which hung on their vines, only a portion colored well; the remainder refused to color or to become sweet.

Whether it was the paucity of fruit, or the use of the sulphur, or a fortunate location of my vines that caused them to retain their foliage I cannot say. I am inclined to give credit to the sulphur, and shall continue its use next season.

In the article in the HORTICULTURIST, already referred to, it is stated that a lady had saved her gooseberries from mildew by the use of the bellows. I tried the experiment on my gooseberries soon after they had formed on the trees; the result was not very satisfactory; most of the berries and many of the younger leaves it is true were saved from mildew, but only by being killed before the blight had a chance to show itself; the sulphur had proved too strong for them; the very few gooseberries that survived the treatment ripened free from disease. I had almost forgotten to say that the sulphur *did* prevent the ravages of the thrips; of this I am confident; it was only at the close of the season, when sulphur had been discontinued, that these insects began to show themselves.

About the 7th of July, I found on several, of my Concord vines a number of bunches of young grapes, covered alike on stem and berry, with a greenish-white mildew; the leaves of the vine were as fair as usual. Up to this time these vines had not received any sulphur. I commenced the dusting at once, rendering those branches and the adjacent leaves yellow with the sulphurous

deposit. I repeated this twice afterwards; the mildew did not extend beyond where I first saw it, but the bunches affected were not cured; they colored and ripened after a fashion, but on the slightest movement of the vine the berries would drop from the stem in numbers, and the ground would be covered with them. On one luxuriant vine the south half was badly mildewed, while the north half, trained along the same trellis, and growing under precisely the same circumstances, produced fine, healthy fruit. As these mildewed branches showed themselves where the vines were thickly planted, and the leaves formed a somewhat dense covering, and as they were withal within two or three feet of the ground, I concluded that a want of proper ventilation and obstruction of the sunlight might have induced the disease. I have no doubt but these circumstances do serve to favor its propagation, if they do not originate it. On the 22d of July, I found this same mildew of the berry prevailing in a large vineyard of Concords, where the disease could not be traced to any of the causes above described. These vines were on the grounds of Messrs. H. & J. Carpenter, about a mile and a half from me. They were situated on a gravelly knoll, in the midst of a large field, away from any trees, and were trained on poles, with ample room for light and air, yet under these circumstances, a crop of perhaps a thousand pounds or more, was ruined by mildew. I saw the vineyard again in the fall, the ground under the vines was strewed with the falling grapes, which, although diseased, had up to this late period remained upon the vines and had colored, but now dropping from the stem were without flavor and worthless. For several previous years these vines had been free from every disease, and had borne splendid crops of grapes. No manure of a stimulating character had been used. Since setting out the plants, bone dust has been the only manure applied, and that not abundantly. How could this disease have appeared under such conditions if not through some atmospheric influence, yet eluding the search of our cultivators?

On the appearance of this mildew the Messrs. C. had applied a solution, or rather a mixture of sulphur and lime in water, but apparently with little or no effect in removing the disease. The foliage of these vines did not have a healthy look; the want of a bright green color to the leaves was visible at some distance, yet they were not so affected as to drop off.

Although mildew did not effect my berries materially, my crop of Concords was diminished somewhat from several other causes. There was a species of rot prevalent to a small extent, and distinguished by a yellowish rusty spot on the berry, as though it had been scalded by the sun, though I do not think it was thus caused. Another kind of rot prevailed, which caused a premature coloring of the berry; in this case the berry hardened, instead of becoming softer, and at the time of ripening was red in color and had to be cut out of the bunch when picked for market. This rot, if it may be so called, showed itself in spoiling single berries on the bunch; sometimes one or two on a bunch, at other times many more. Large bunches of grapes were thus reduced by the necessary thinning out to very small specimens. I think this difficulty occurs during the same kind of weather that seems often to generate the rot on the Catawba. I mean the hot, close weather, which with alternate sun and shower brings out rust upon wheat.

My crop of Concords was also shortened by the splitting of the thin skin that envelopes this grape; this happens often just at the point of connection with the stem, and is not perceived until the berry is found to lose its fullness, and to dry up. In picking for market, many berries thus split have to be removed.

The birds also inflicted much damage, perhaps as much as was caused by any two of the agencies I have just mentioned. I suppose I am more of a sufferer in this way than many others, because my grounds are thickly planted with trees, and these in groves, and adjacent to the vineyard. The determination of the birds to regale them-

selves on my choicest Delawares, Dianas, Concords was most persistent. In my first experience in this line, I merely frightened the birds away from the vines, but this was a lenity for which I dearly paid. I constantly found my choicest bunches of grapes one after another turned into unsightly masses of decaying fruit, and the crop daily diminishing from the attack of these intruders.

I was unable to save any superior bunches for exhibition, until I finally covered a few with bags made of coarse millinet, and this protected them. After several seasons of trial I have at last resorted to the gun as the best mode of defence. I do not mean merely the exhibition of this instrument as a terror to evil doers, but something more: I mean its use for the actual destruction of all depredators. I know some will deem the treatment harsh and cruel. If so, then we must give up the cultivation of the earlier and sweeter grapes, or else discover some other means for the constant and effectual expulsion of the depredating birds. Two gentlemen of my acquaintance set up scarecrows among their vines; these were found serviceable, at least for a time, but they are not practicable on a large scale, as they would have to be distributed at frequent intervals along the trellises.

As for driving away the birds by the throwing of stones at them, it is useless to attempt it; made to fly from one corner of the vineyard, they will alight in another; then, if pursued, they will most likely take refuge in the place whence they were at first expelled, and so back and forth, until the discomfited pursuer is breathless and disheartened, or if the birds fly from the vines into neighboring trees, the wily thieves will wait there, until the back of the vineyardist is turned, and then swoop down again to renew the feast with an appetite only sharpened by the temporary interruption. If you wish to save your choice and early grapes for your own eating, rather than furnish delicate food for the fowls of the air, early in the morning light seize your gun, rush out, and lay low the very first bird found perching on your trellises, or covertly flitting from row to row under the vine leaves. But, hold, I should not say *every* bird; I do not think I ever saw the wren, or the blue bird, or chipping bird, or the yellow bird guilty of this wasteful foraging; but if you see under these circumstances a cat bird, a robin, or an oriole, forget for a moment their sweet songs of a spring morning, and shoot; it is hard, I acknowledge, but to lose all your grapes right before your eyes is still harder.

In addition to the kinds of grapes already named, suffering from the rapacity of the birds, add the Hartford Prolific, and I may perhaps say, all of the very early grapes. The Isabellas are rarely touched, except by an occasional flock of robins; the Catawbas never. A gentleman living within the limits of this city, where we do not ordinarily look for many birds, told me, last summer, that he should give up the cultivation of the Elsingburgh, among the many varieties that he raised, solely on account of the impossibility of obtaining any fruit of this sort; the birds devoured or destroyed the whole of it. Others in this vicinity picked their grapes before they had fairly matured, in order to save them from total destruction by the marauders.

Some cultivators complain of the bees and the wasps injuring their crops; I am inclined to think, from my observation, that as long as the grape berry is sound, it is impermeable to the attacks of these insects; but as soon as a Delaware or a Concord splits, as they both will at times, or as soon as they are punctured by the bills of birds, the juice exudes, and then the wasps and bees, with the flies, all congregate to feast on the unimprisoned sweets. I could always tell on my vines where the birds had been at work, by the activity of these insects in the immediate neighborhood. I am aware that wasps destroy blackberries, and injure pears and peaches, but in these fruits, there is always a soft place frequently of initial decay, which gives opportunity for the first perforation, and

the work is continued by undermining the skin and consuming the tender flesh beneath. The enveloping skin of the grape is equally hard and tough at all points. I speak of our out door grapes; those grown under glass, with a tender skin, may possibly be liable to injury from wasps.

These insects, then, do not originate injury, but only continue it; coming to feed where some operation of nature, or the art of a bird, has already opened for them in a fountain of sweet juice, a most inviting entertainment.

My rambling notes are perhaps already extended, but as a part of my experience I would like to add the fact, that out of twelve or thirteen or more varieties of grape cultivated by me, I find that Rogers No. 15 exceeds them all in high aromatic flavor, so much so, that the finest Concord tasted after it, is tame and vapid. I tried this experiment on several visitors to my vineyard last summer, and they all acquiesced in this opinion.

This grape has not the delicate juices of the Delaware, but, on the other hand, it has a sweet, tender and meaty pulp, highly flavored, and at once reminding the taster of the Black Hamburgh grape, from which variety it is said to have been in part derived. The vine itself is vigorous and hardy, and has the merit of retaining its foliage in perfection, an advantage not to be despised, where the Delaware is apt to cast its leaves before maturing its fruit, and of which fact I saw many instances last season.

Po'keepsie, Feb'y 1st, 1866.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and publishing departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

We have just published, at this office, new and revised editions of Jacques' popular manuals of The Garden, The Farm, The Barn-Yard, and The House.—These treat very thoroughly the subjects named, have been carefully prepared and revised by a popular writer, and we commend them to our readers as valuable additions to their libraries. Sent, post paid, on receipt of price. The Garden, Farm, and Barn Yard, $1 each; The House, $1.50.

Early Disbudding the Grape.—The old saying of "a stitch in time," etc., is strictly applicable in training the grape vine. As soon as the buds have grown to four inches, they should be carefully looked over, and all shoots rubbed off except such as are wanted to grow and leave the vine in good shape for another year. In vineyard culture, the shoots to be left, for new and fruiting canes the following year, will vary from one to three, according to the strength and vigor of the root. In the spur practice, buds for new canes are only to be left where an arm or upright is needed to fill up, or some old one renewed. The pruning of the grape vine is really simplicity itself, notwithstanding so much, *pro* and *con.*, written upon it. If care is given to disbudding at the right time,—that is, before the shoots have made over 4 inches (better even less) growth, and a little common sense as to how much nature can endure, and keep healthy, in the way of wood and fruit, the pruning of a vine would require little use of anything but thumb and finger.

Failure of Cuttings to Grow.—We believe many grape and other cuttings fail

to grow because of too long drying, or being out of the ground from the time of cutting from the vine or bush, until planting out. In our practice, we have rarely lost a cutting whenever we put it in sand or earth immediately after taking it from the parent plant. When we have received cuttings too dry to please us, we have practised laying them horizontally under ground about four inches deep, in a well-drained place, and then frequently saturating the ground with water. We thus keep them wet, and the wood and buds swell alike evenly, while the well-drained or sandy land prevents any standing water.

Remember to pluck off any fruit that may set on a newly transplanted tree or vine. If left to perfect, it will be at the expense of healthy, vigorous growth of the plants, and corresponding depreciation in quantity and quality of fruit the next season.

Grape-Houses.—When the roots are entire inside, it is better to thoroughly saturate the ground once a week, or as often as necessary, than to be dribbling on water daily. With good drainage, the former course wets and stimulates all the roots alike, while the latter only gives but half a drink to those near the surface. With good, vigorous, healthy roots, no failures need occur in growing grapes inside.

Dahlias and Double Hollyhocks form elegant features as backgrounds to a flower border, and masses of them, at intervals, on the sides of approach roads, are very pleasing, and help to give variety and charm to the grounds. In planting out the dahlias, use but one stem at a place; set them about three feet apart, and as they grow, pinch back, so as to make them grow more like bushes than trees. The waste water from the kitchen—soapsuds, &c., is one of the best manures for the Dahlia.

Hollyhocks have come to be equally beautiful in flower as the Dahlia; and, as they can be left in the ground, will probably become more and more in vogue. They should be transplanted and divided, about once in two years.

Choice of Roses.—Although the Hybrid Perpetual Roses give blooms more or less during the season, and are perfectly hardy, so that they may be left out all winter, yet the beauty of a rose-bed—one where buds and blossoms may daily be gathered—will be found to consist in having a large proportion of Teas, Bengals and Bourbons. Novelties, *i.e.*, new varieties, are brought out each season, one or more of which every amateur is expected to buy; but of the old sorts that have proved good with us we name—Adam, Bougere, Caroline, Sombreuil, and Cels, as of Teas; Agrippina, Louis Philippe, and Lady Byron, as of Bengals; Bosanquet, Hermosa, Souvenir Malmaison, and Paul Joseph, as of the Bourbons. There are many others, perhaps, equally good, perhaps, better, but the above small list embraces those that have always given us pleasure, as good growers and free bloomers.

Flowering Shrubs, such as Weigela, and others that flower on the preceding year's growth, should be trimmed back immediately after they have done flowering in June. By so doing, the plants can be kept in just such shape as may be desired by the operator.

Roses, as soon as the flowers have opened and bloomed one day, should have the decaying flower cut away; cutting back to a good strong bud, from which will come a new stem and flowers. Attention to this practice of cutting will keep plants blooming almost continuously.

The White Sugar Beet, if grown in ground not too rich, we have found more delicate for the table than any other variety, if we except the Bassano.

Beds, or Borders, where Tulips, Hyacinths, &c., are grown, may be planted with verbenas and other bedding out plants, taking care to so plant that when the time —August—comes for taking up the bulbs, the roots of the bedding plant may not be disturbed.

When Transplanting Tomatoes, Egg Plants, &c., set the roots in a pan of muddy water. Perform the work just before sundown, and few will fail. If the following day is a very clear, hot and sunny one, then it is best to shade them during the heat. Shingles, stuck on the south and west side, answer well.

Those who have peach trees should not fail to cut them back this spring, and so cause them to throw out new and vigorous shoots, and give improved shape to the tree. Do not cut, however, until about the usual time for the peach to bloom, but then head back severely. Old and scrawny trees will bear to be cut nearly back to mere stubs, or with limbs only one to two feet long.

Fruit Trees should be carefully looked over in April and May, and the webs or cocoons of insects destroyed. Any appearance of black knot on young trees should be cut away. If the coccus or scale insect shows itself, wash the bodies at once with strong ley and sulphur. Some advise a wash of salt brine all over the tree at this time; we have never tried it, and therefore cannot speak knowingly of it, but intend to be able to do so another year.

The Persimmon.—The tree of the Persimmon is one of the most beautiful in its habits of growth, as well as in the glossy character of its foliage; but, aside from its beauty and adaptation as an ornamental tree on lawn or road side, its fruit is very delicious. Many are under the impression that persimmons are utterly unfit to eat, and the expression "as puckery as a presimmon" is used to decry any acid substance; but such expression does injustice to the persimmon, which varies as much in its fruit, as a like number of apples and pears. In Southern Illinois, Missouri, and elsewhere, there are many trees of persimmons that ripen their fruits in August and September. Seeds of such should be obtained, if to be grown from seed, but if young trees can be obtained, it is better to engraft with scions from trees known to produce large fruit, and that ripen early in the season. The late ripening sorts are many of them good, and if left on the trees until midwinter are almost as good as bananas, or pawpaws, which they nearest resemble in taste.

The Peach Worm—*Egeria Exitiosa.*—May be prevented from doing much injury to the peach tree, by clearing away the dirt, say four inches deep at the crown of the root, and painting it six inches up on the body of the tree, with coal or gas tar; but the work must be done before the leaf starts.

Grape Cuttings.—For some years we have grown more or less of grape cuttings from single eyes, in the open ground; we first prepare the ground, by trenching and enriching; then our eyes are cut, with about one and a half inch of wood below the bud, and about half an inch above; we set our eyes carefully, in an erect position, and cover nearly an inch with the fine soil; then we add about three inches of a light mulch, saw-dust, or fine chopped straw and saw-dust mixed; water thoroughly, if it does not rain about the time of planting—and afterward we look over our beds from time to time, and whenever they appear dry we water; but in most seasons this part of the work is only on paper; occasionally we have had to do it, and only name it here because success depends on keeping an even state of moisture in and around the cuttings; others may not succeed as we have, but any one can try it.

New Strawberries.—We have had our day of enthusiasm on new plants, fruits, etc., and especially have we "gone it" on strawberries; our experience, therefore, may perhaps cause us to be now more than careful ere we dictate on the "wonderful" qualities of new sorts, as they are from time to time being introduced. The present season, perhaps, as many or more new varieties are being offered for sale than usual, and while it may be well for the amateur to try all, the owner of a garden spot, wherein he designs to grow strawberries for their fruit, had best confine himself to some two or so of leading well known kinds, that all acknowledge to be good in their fruit, vigorous of vine, and productive of quantity. To select these sorts it is only requisite to look into a few of your neighbor's gardens, and use the Yankee's privilege of asking a question.

Peas soaked twenty-four hours in urine, then dried off in ashes or plaster, are said to come forward much earlier, and stronger than when planted in a dry state.

Oyster Plant or Salsify—Remember, that to grow this plant well, it requires a *deep* and rich soil. Sow the seed pretty thick, and after the plants are up two inches high, thin out to one in about four to six inches in the row, with the rows one foot apart. No Vegetable is more delicate or attractive to the palate in early spring than the salsify, when it is well grown and well cooked—every garden should have a bed of it.

Grafting or Spring Budding the Peach.—When a new variety is obtained in spring, with some doubt of the tree living, or when trees budded last fall have failed to unite, it may be desirable to graft or bud in spring; to do this, cut the grafts and place them in the cellar about ten days before you design to perform the work; then use a graft or cutting of two buds, on a lateral, inserting it as in budding, and tie with bass matting as usual in budding; or form a graft of two eyes, as for a pear or apple. inserting it as described in the books for side grafting, and immediately tie the branch above, over in the form of an arc. If the branch on which you engraft is too large to bend over easily, then cut it off at once, about six to eight inches above the insertion of the graft.

Strawberry.—Vines, planted at this season of the year and mulched, will often give a partial crop of fruit—are very sure to live and grow, and increase during the summer; so that vines now planted three feet apart each way, will by fall nearly cover the entire ground. Spade or plow the ground as deep as possible, say nine to twelve inches, rake level, and plant. Moderately rich ground is better than either very rich soil, or that which is poor. Too rich a soil causes the plants to make too many runners and new plants, at a loss of fruit, while too poor ground gives a feeble growth of vine, and a small fruit. If manure is used to enrich, it should be old and well rotted.

Celery.—The seed of celery should be but barely pressed into the mold, and then a board laid upon it, say for forty-eight hours; afterwards raise the board up, say about two inches, and keep the celery shaded until it has grown an inch, when the shade should be removed, except in the middle of the day. It is not *necessary* to have a hot bed in which to grow celery plants for next winter's use; but if you have a gentle bottom heat from a spent hot bed, all the better. Many burn their seeds and young plants by using too strong a bottom heat.

When transplanting to the rows for permanent growth, trenches may or may not be made. We have grown just as good celery plants, when planted on level ground—soil having first been made deep and loose,—as we have in trenches.

Salt we have found one of the best manures; use at the rate of eight bushels to the acre, or, if you have animal manure which you design to apply to your celery ground, use half the quantity in proportion, diluted and poured on, and mixed up with the manure before applying it on the land.

Plaster Paris.—Gypsum is extremely beneficial on every garden where animal manures have been applied for years. If your garden soil was last year pretty full of worms, leave off the dressing of animal manure this year, and apply at the rate of four bushels of salt, and one and a half of plaster per acre.

The Linnœus Wine Plant is one of the numerous barefaced impositions of the day, which is receiving merited exposure in various quarters. This wine plant, as it is called, is nothing but the common garden rhubarb, and yet it is sold, by itinerant swindlers, by tens of thousand dollars worth, in various parts of the country—The American Institute Farmers' Club have tested the liquor made from it, and pronounce it "a nauseous, unwholesome compound of acid and sugar, partly converted into rum, as unlike wine as those who sell the plants are unlike honest men."

We are always interested and gratified in hearing of anything new in the way of material for hedges. While the necessity exists for every man's fencing out his neighbor's stock, every plant that will form a live fence, in the place of the costly and unsightly rails, and boards and posts, which now encumber our lawns and fields, is valuable, not only in an esthetic, but in an economical point of view. The annual cost of fencing the farms of the United States would soon pay the national debt, large as that is. The desideratum for live fences is, to find a hedge-plant that shall be perfectly hardy, easy to propagate, and that shall afford protection against the intrusive propensities of cattle and other animals. It is said that the common barberry (*barberis vulgaris*) combines these qualities in a noteworthy degree. The barberry is indigenous to the northern parts of Europe and Asia, but has become thoroughly naturalized—like many other foreigners—to the American soil.—The *Wallingford Circular* speaks in high terms of the barberry as a hedge-plant, and notes in its favor its "habit of sending up suckers from the bottom, by which, in a few years, it comes to have a base from six to twelve inches in diameter." It occurs to us that this "habit of sending up suckers" might become troublesome in the neighboring lawn or garden. However this may be, the barberry is worth testing for hedges.

Our Correspondent who inquires as to the expediency of plowing up his lawn, on account of the running out of the grass, is informed that there is a remedy for this difficulty, without the necessity of any such inconvenience as is suggested. The fertility of the lawn may be restored and preserved by thorough top-dressing. Use for this purpose stable manure, bone dust, plaster, muck, ashes—whatever the soil seems most to need to restore and enrich. The lawn should be, of course, properly underdrained, and then, with judicious treatment in top-dressing, rolling, and mowing, it may be kept perpetually in the finest condition.

The Gardener's Chronicle (Eng.) recommends the planting of snowdrops in masses on lawns, and tells us that the effect in early spring is admirable. The roots are planted in the green sward, and on the melting of the snow, before the grass starts so as to conceal them, they burst forth into full bloom. The leaves of the snowdrop are formed early in the season, and before the grass requires to be cut they have performed their functions. The bulbs, there fore, lie securely under the surface ready to start up into beauty the following spring. We should be pleased to see this experiment tried on some of our beautiful lawns.

An elegant testimonial, in the shape of a gold medal, has been presented to an American *savant*, Townsend Glover, Esq., by the French Emperor. The occasion was an exposition at the Palais d'Industrie, in Paris, of useful and injurious insects. Mr. Glover has been employed for some time in the Department of Agriculture at Washington. He is well skilled in the science of Entomology, and his researches and labors in the interests of Pomology have been of great value to horticulture. On the occasion of the French Exposition, his contributions to the knowledge of insects injurious to horticulture, &c., gained him the Imperial gold medal. It is an honorable distinction for our country to be so represented among European savants in the walks of science.

The application of manure to fruit trees should be made with a view to feed the roots and not the trunk. We often see a heap of compost, or some sort of fertilizer, piled up around the foot of the stem, where it can do very little good. Fruit trees of six or eight feet in length extend their roots about the same distance on every side. The fertilizer should, therefore, be spread over that amount of surface, worked into the top of the soil, so that its stimulus may reach the roots and rootlets, and so supply nourishment to the tree.

Hovey's Magazine, in a notice of the chief publications on horticultural subjects which appeared during the past year, thus speaks kindly and genially of the two works which have been issued from our office: — "Woodward's Graperies and Horticultural Buildings, an excellent volume, giving a variety of information in regard to the constructing, warming, &c., of such structures; also, Woodward's Country Homes, a work which may be read to advantage by all who are about building in the country."

Caladiums, to our fancy, are not particularly ornamental as house plants for summer, except to hide the nakedness of a greenhouse; but if they are massed out in the grounds, they grow so large and rapidly, and their foliage is so strong, that they make a very distinctive feature in the grounds, and so ornamental. They may be taken up in the Fall, and kept with little or no care, in a cellar that is dry and free of frost.

We observe that the Massachusetts Horticultural Society has made an appropriation of $3,100 for premiums the ensuing year, to be divided between gardens, flowers, fruits, and vegetables. What is the New York Society doing to stimulate competition and encourage horticulture?

BOOKS, CATALOGUES, AND PAMPHLETS RECEIVED.

Rural Affairs.—We have received Vol. IV of this welcome publication. Much useful information to those who have a farm or garden to cultivate is to be found in its pages. Published by L. Tucker & Son, Albany. Price, $1 50.....Transactions of the Illinois State Horticultural Society. ....Transactions of the Agricultural Society of the County of Plymouth, Mass.... John W. Adams, Portland, Maine, Evergreens and General Nursery Stock....F. B. Fancher, Catalogue of Grape Vines.... Henry A. Dreer, Philadelphia, Flower Seeds....G. Marc, Astoria, Long Island, Trees, Shrubs, Vines, Greenhouse, and Hardy Plants.....E. Ferrand, Detroit, Mich., French Hybrid Gladiolus....John C. Teas, Raysville, Indiana, Raysville Nursery....E. Y. Teas & Bro., Richmond, Indiana, Nursery Stock....John Saul, Washington, D. C., Catalogue of Plants..... Prince & Co., Flushing, L. I., Grape Vines,